CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1. A method for managing inventory comprising the steps of:

converting an inventory problem to a financial portfolio problem;

generating a set of possible inventory investments;

computing a value of possible inventory investments; and

selecting an inventory investment with a best value.

2. The method for managing inventory of claim 1, wherein the step of converting the inventory problem into a financial portfolio problem expresses the inventory problem as a combination of long and short positions and put and call options on an asset.

3. The method for managing inventory of claim 2, wherein the value of possible inventory investments is computed by the steps of:

decomposing cash flows associated with the inventory investment into a combination of cash flows that can be represented by a portfolio comprised of long and short positions in an underlying asset;

computing with a valuation methodology the value of each long and short position in the portfolio;

summing values of each long and short position in the portfolio to determine a value of the portfolio; and

setting the value of the inventory investment equal to the value of the portfolio.

4. The method for managing inventory of claim 3, wherein the valuation methodology comprises one or more of a cash flow analysis, an option valuation analysis, a derivatives pricing analysis, variance reduction procedures, and finite difference methods.

5. The method for managing inventory of claim 3, wherein a value of an underlying asset of the portfolio is a demand for the inventory.

6. The method for managing inventory of claim 1, wherein operations research techniques are used to compute an inventory investment with a best value.

7. The method for managing inventory of claim 1, wherein an inventory investment with a best value is a highest expected value.

8. The method for managing inventory of claim 1, wherein inventory is selected using one of optimization, simulation, dynamic programming, heuristics, rule-based systems, and a budget constraint.

9. The method for managing inventory of claim 1, wherein the step of computing a value of possible inventory investments is based on one or more of demand variability, risk free interest rate, current level of demand, and historical level of demand.

10. A computer system for managing inventory comprising a plurality of clients connected to a common server and a storage system connected to the server, the storage system storing demand forecast, market price for products, manufacturing or purchasing cost for products, holding and backlogging cost for products, and inventory quantities for products, the server receiving inputs from the clients and converting an inventory problem to a financial portfolio

problem, the server further generating a set of possible inventory investments, computing a value of possible inventory investments, and selecting an inventory investment with a best value.

11. The computer system for managing inventory of claim 10, wherein the server converts the inventory problem into a financial portfolio problem by expressing the inventory problem as a combination of long and short positions and put and call options on an asset.

12. The computer system for managing inventory of claim 11, wherein the server computes the value of possible inventory investments by decomposing cash flows associated with the inventory investment into a combination of cash flows that can be represented by a portfolio comprised of long and short positions in an underlying asset, computing with a valuation methodology the value of each long and short position in the portfolio, summing values of each long and short position in the portfolio to determine a value of the portfolio, and setting the value of the inventory investment equal to the value of the portfolio.